

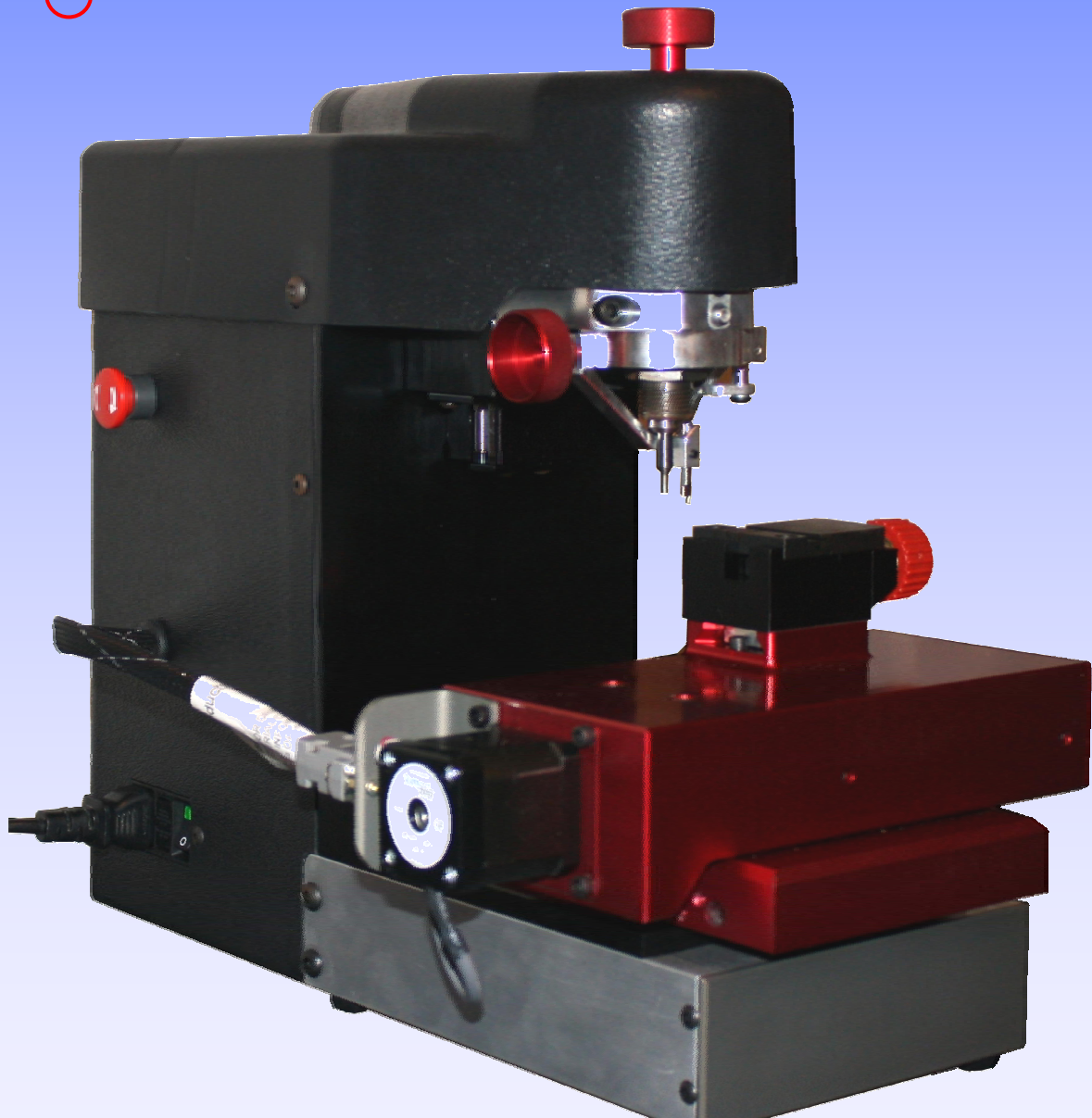
3-D Pro

User Guide

Please read this User Guide

The 3-D Pro will only operate as instructed.

Please make sure that the correct cutter and jaw combination are in place before cutting the key!!!!



It is recommended that Safety Glasses be worn at all times when operating this machine

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Checking your new 3D Pro

Thank you for purchasing the 3-D Pro Please check for any damages caused during shipping, if any damage is found, please report it immediately. If damage is not reported on the day of arrival, the customer will be responsible for any repair costs.

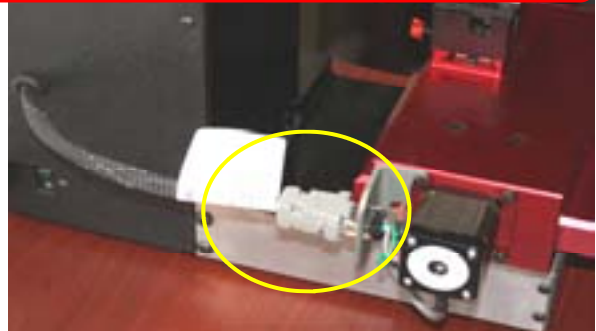
- Make sure the plastic covers on the 3D Pro are not cracked or broken.
- Check that the tracer swing arm flips up and down properly
- The machine should have no major scratches or markings
- All missing parts should be reported upon day of arrival

Contents

1 x 3-D Pro Machine	1 x TR 2.5 Cutter
1 x 3-D Pro Software CD	1 x TR 62.2 cutter
1 x Jaw 1 (High security Jaw)	1 x Stylus
1 x Jaw 2 (Standard Jaw)	1 x Tip Stop
1 x VW Adaptor	1 x Software Key (USB dongle)
1 x Mercedes Adaptor	1 x AC Power Cord
1 x BMW Adaptor	1 x Instruction Manual

Optional Parts: *Bolt-Down Kit *Laptop Mount *Tibbe Jaw

*The 9 pin serial cable exiting the left side of the machine case should only be plugged into the 9 pin serial plug on the left side of the X table. (see pics below)
Be sure to tighten down the two small flathead attaching screws.
Do not plug the 9 pin serial cable into a computer, this will short out the control board.*



Hardware Requirements

- Windows XP - SP2 or higher, Windows Vista, and Windows 7 all work fine currently
- **Laptop or PC** with Windows XP at least 512Mb of RAM (1Gb for Vista and Win 7)
- **2 x USB ports** – one connects the software key, the other connects the machine
- **Minimum of 1,000 watt power inverter** - pure sine wave inverter is recommended to extend the life of your 3D Pro and laptop.
- If using an inverter to power the 3D Pro, make sure the inverter is properly grounded to the vehicles chassis otherwise you may incur problems with the operation of the machine.

Operating system must be 32 bit 64 bit operating systems will not work at this time

Software Installation

Installing the Software

1. Insert installation CD-ROM into CD/DVD drive
2. If installation setup does not start in auto-run mode, follow steps 3-6
3. Click on the *Start* menu
4. Click “My Computer” or “Computer”
5. Double-click CD/DVD drive icon
6. Open the *3D PRO Install Bundle*, double click on the file named “*setup*” to begin the installation
Follow the instructions given in each window until setup is complete.



7. Install the “*Simple Step ActiveX Setup*” follow installation instructions.



Making your computer recognize the driver for your 3-D Pro

1. Connect power cord to the left side of the 3D Pro and plug the three-prong end into a 110 volt (or 240v) power outlet. Make sure the outlet is grounded (earthe)
2. Connect USB cable to the machine, the female USB plug on the 3D Pro is located in the back right side of the case.
3. Turn the power switch on or in the up position, you should see a green light indicating that the power is on.
4. Make sure your emergency stop button is popped out, this is located on the left side of the machine. Turn the button and it will pop out if depressed.
5. Your computer will try to install the driver for the 3D Pro.
If it does not automatically come up with “*Found New Hardware*” and try to install it, check to make sure the emergency stop button is popped out.
When asked to locate the drivers, redirect the browser window to the CD/DVD ROM drive folder.
You will want to select “*Device Driver XP*” for an XP computer and “*Device Driver Vista and 7*” for a Vista or Windows 7 computer.
6. If the driver is not installed correctly you will notice a yellow exclamation mark over the device. You have to make sure that it installs the driver correctly, if not you will not be able to proceed as it does not recognize the machine.
7. Once the driver is installed correctly there will be a “COM” number assigned to it on the end of the SimpleStepSSXYZ motion board controller.
8. Insert the “*Software Key*” into any free USB port. It will automatically install the driver for this device. [See: The Dongle or “Key” on page 5](#)
9. Proceed once you have determined that the driver for the 3D Pro is installed correctly with no errors. Status should read “*The device driver is installed correctly*”.

Finding the correct COM port

The new version of the 3D Pro Software will not require these steps because of the auto-connect feature

1. Click the Start menu
2. Right-click on **"My Computer"** or "Computer" and choose **"Properties"**
3. Click **"Hardware"** tab and choose the **"Device Manager"** button
4. Click next to **"Ports"** and the COM number should be listed on the end of the **"Simple Step Motion Controller"** This is the port or COM number your computer has assigned the machine.
5. Double-click on the **"Simple Step Motion Controller"** and a dialog box will appear.
6. At the top of the box, there will be a tab called **"Ports Settings"**, click it.
7. Click on the **"Advanced"** button and change the COM number to 5 as this is the default COM number set in our software.
8. The COM number you choose can only be 2 through 9.
9. After clicking on ports, a parameter named **"Baud Rate"** will be shown in the **"port setting"** tab.
10. Click on the drop down button and a drop-down menu will appear, choose **"57600"** and click **"Ok"**
11. Close the Device Manager window

The dongle or "Key" MUST be inserted into one of the USB ports before the software is opened..... [See: The Dongle or "Key" on page 5](#)

Starting the Software

1. Before opening the icon on the desktop, right click on the icon and choose **"properties"**. Then choose **"compatibility"** tab and make sure that the box next to **"Run this program in compatibility mode for XP SP2"** is checked off before proceeding. Be sure to click on **"Apply"** and **"Ok"** before closing. Step 1 is not needed for XP operating systems.
2. Now double-click on the laser key icon on the desktop to start the software.
3. You may receive an error message stating that, **"Communications Error; Board Not Found"**. This is fine just click **"OK"** to proceed to the home screen.
4. **Now you will need to cycle the power on the key machine off and then on again.**
5. Click on the **"Re-Connect"** button and you will see and hear the table on the machine go to the home position.
6. At this point you will be connected to the 3D Pro if no error message occurs.
7. To make sure check the status box on the bottom left, it will say **"Motion Board Detected"** in a **green** color if all is connected properly. If you get the message in green then you are ready to proceed to the next section.

Using the Machine

The Software Key or “Dongle”

The software Key or “**Dongle**” **MUST** be inserted into one of the USB ports on your lap-top or PC before the software is opened.



The Key



Click on the 3D Pro “**icon**” that was placed on your desktop when the software was installed. A box will open “**Searching for Key**” when “**Key found**” appears, click “**OK**” and the software will open.



*It is recommended that you turn off the power to the key machine when changing cutters
This will prevent any injury caused by accidental starting of the key machine.
Most users do not turn off the power to change the cutters but do so at your own risk.*

Changing the Cutter or Stylus

“**The Collet**” – Holds the Cutter or Stylus in the spindle.

To remove the cutter or stylus, first hold the red knurl knob on the top of the machine sticking up through the lid.

There is a “**spindle stop button**” on the front of the head unit which you can press in.

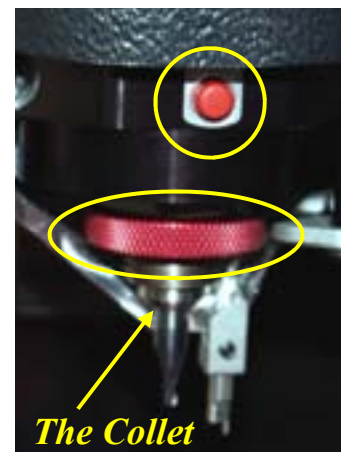
Now turn the knob on top with your hand until you feel the spindle stop button press all the way in. Turn the knob counter clockwise and you will feel the collet loosen.

The cutter or stylus can now be removed.

*Machines that do not have the “**spindle stop button**” will have a red “**knurl knob**” underneath the head unit that you will use together with the top knurl knob to loosen the “**Collet**” and remove the cutter.*

When replacing the cutter or stylus, insert it into the collet and slide it up until it stops.

Press the spindle stop button in until it catches so you can tighten the collet back up on the cutter, it does not have to be extremely tight, hand tight should be sufficient.



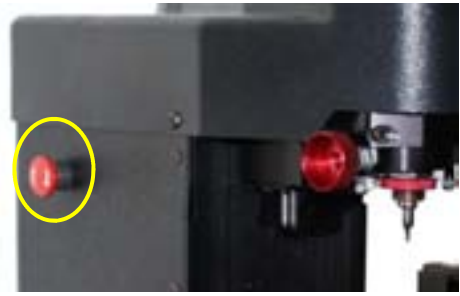
*If one of the ends of your TR62.2 double ended cutter is broken, you will notice that it inserts farther into the collet than normal. This is fine just be sure to click on “**Enter**” before clicking on the “**Start**” button so it will compensate for the new length.*

The Emergency Button

The **“Emergency Button”** is situated on the left hand side of the machine.

In an emergency, hit the button to turn off the machine.

To turn the machine back on, twist the button clockwise and it will pop out.

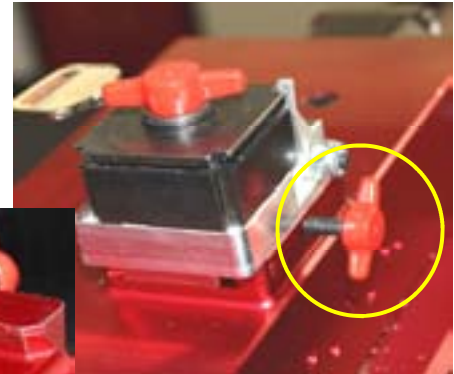


Installing and Removing the Jaws

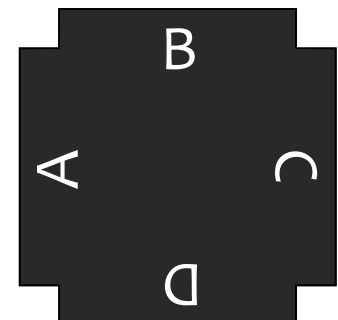
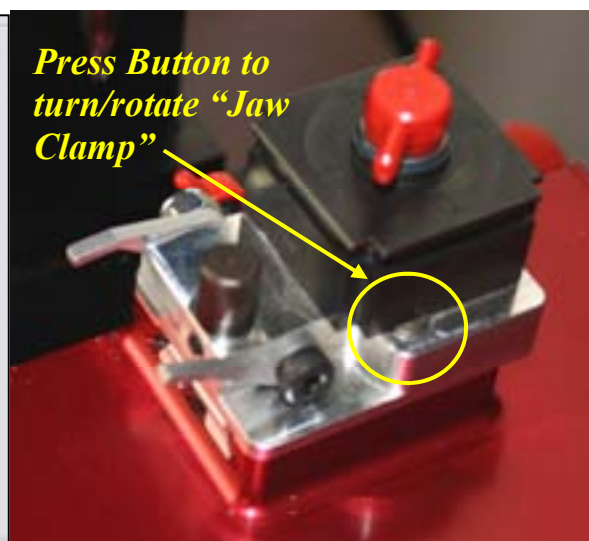
When installing or removing a jaw, look behind where the jaw is attached, you will notice a red **“T knob”**

Turn the **“T knob”** counter clockwise to release the lock pin, the jaw can be now be removed from the table by sliding it off to the right.

Replacing the jaw is the same operation in reverse order, if the jaw will not slide into place, make sure the angle of the lock pin matches the angle of the dovetail, and lock pin is not protruding (like the one in the pic)



Turning/Rotating the Jaw Clamp ... Jaw 2



Remember to check which **“Jaw Clamp”** is used for each type of key **“A”, “B”, “C” or “D”**

The jaw clamp may be

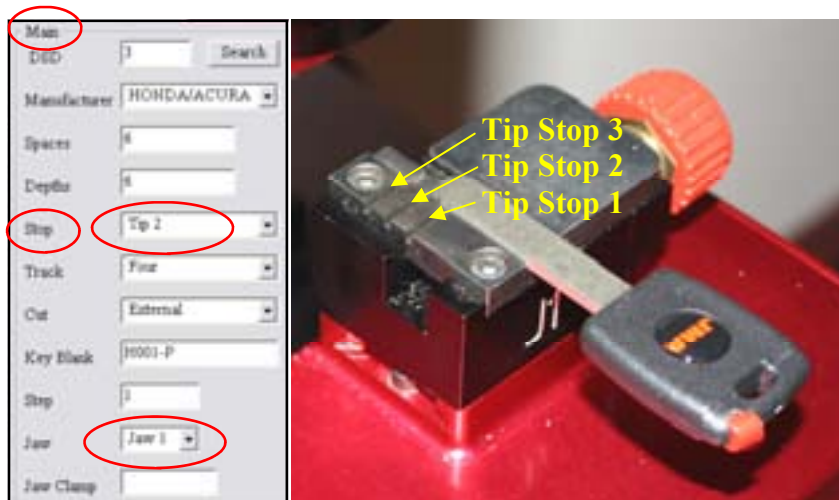
different for different types of keys.

On the software home screen look at the last box under the **“Main”** column labeled **“Jaw Clamp”**.

You can **“turn/rotate”** the jaw around, by **pressing down on the small button** located at the bottom front edge of the square revolving **“Jaw Clamp”** on Jaw 2.

Remember to ALWAYS fold the “Shoulder Stop” or “Tip Stop” back down before you start to Trace or Cut a key

Clamping High Security Keys in Jaw 1 “Tip Stop”



“Jaw1” is always used for ALL high security (laser style keys)



The “Cutter” used with “Jaw1” is always the “TR2.5” single ended cutter

When you select a High Security key from the menu, the software will tell you which slot to place the “Tip Stop” in on “Jaw 1”

After you have selected the high security key, look under the “Main” column on the home screen, you will find the tip stop number next to the box labeled “Stop”.

It will read “Tip 1”, “Tip 2”, or “Tip 3” now place the tip stop in the correct slot, lay the key flat in the jaw and slide the key forward until it touches the tip stop, tighten the red knob to lock the key in place

This is the “Tip Stop” and this is how it sits in “Jaw 1”

Sit the tip stop in the correct slot in the jaw, slide the key in until it touches the tip stop and tighten the jaw.



Warning: Do not forget to remove the tip stop before tracing or cutting a key.

Clamping High Security Keys in Jaw 1 “Shoulder Stop”

When selecting a key that calls for a “Shoulder” stop, place the key in the jaw and slide it forward until the shoulder of the key is touching the front of the jaw.

No tip stop is used for this type of key.

Tighten the red knob to lock the key in place.



Clamping High Security Keys that require “Adapters”

“VW” Adaptor

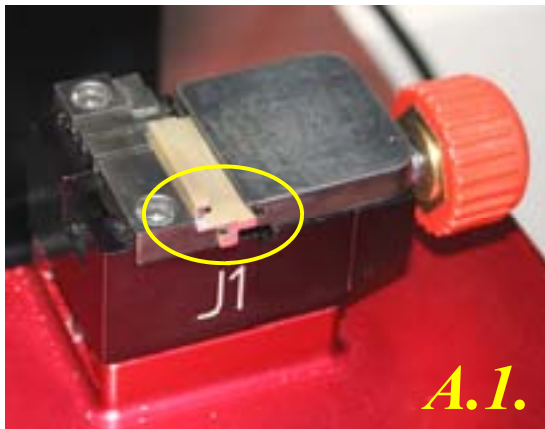
When a VAG (HU66) key is selected, it requires the “*VW*” Adapter to be used.

Open Jaw 1 wider than you normally would to allow the adaptor to be inserted, it should slide in easily and fit on the left side of the jaw.

Slide it forward until the adaptor stops and will push forward no further .. see *fig A.1*

Now insert the key into the adapter and slide the key forward until the shoulder of the key stops on the adapter.

The key will be on the right side of this adapter once clamped in the jaw.. see *fig A.2*



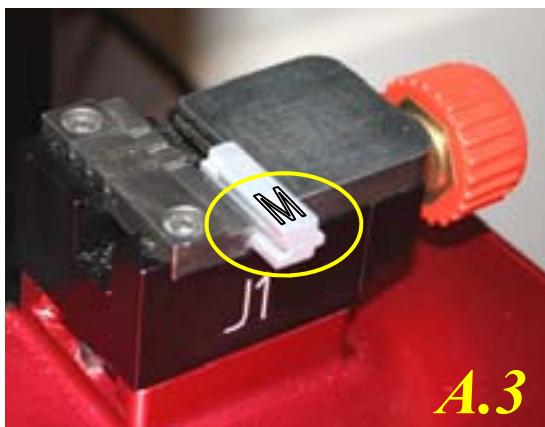
“M” Adaptor

When a Mercedes 2 Track key is selected, it requires that the “*M*” adapter be used.

Open Jaw 1 wider than you normally would to allow the adaptor to be inserted, it should slide in the right, or moveable side of Jaw 1, you will notice that there is a slot on the right side that the adapter slides into .. See *fig A.3*

The adaptor will be on the right side of the key once clamped .. See *fig A.4*

Note: When using this adaptor you will also need to use the tip stop in “*Tip Stop 2*” (slot 2)



Clamping High Security Keys that require “Adapters”

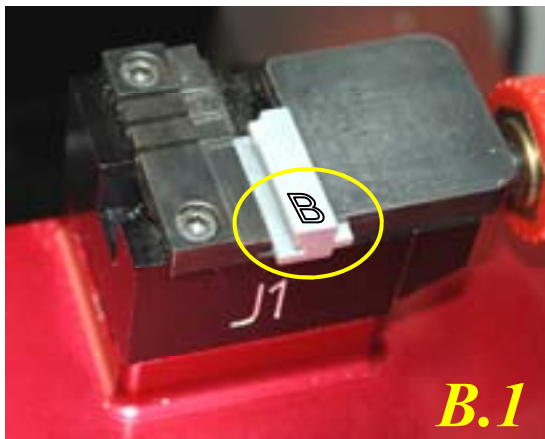
“B” Adaptor

When a BMW (HU92) 2 Track key is selected, it requires that the “**B**” adapter be used.

Open Jaw 1 wider than you normally would to allow the adaptor to be inserted, it should slide in the slot on the “**right**” or moveable side of the Jaw .. see **fig B.1**

The adapter will be on the right side of the key once clamped .. see **fig B.2**

Note: When using this adaptor you will also need to use the “**Tip Stop**” in tip stop 2 (slot 2)



Clamping Non High Security Keys in Jaw 2

Be sure that all keys are inserted completely into the back (bottom) of the Jaw unless otherwise specified in the text box in top right corner of the home screen. The message will appear once the key is selected, if there are any notes like “**clamp key on milling**” it will appear here.

When tracing or cutting the second side of a double sided key, if there are no 1 depths towards the tip of the key it will not automatically align in the jaw.

To keep the key correctly aligned in the jaw, you must align the key by eye.

The best way to do this is compare the milling marks on the key to the straight edge of the jaw.

Clamping Non-High Security “Shoulder Stop” Keys in Jaw 2



“Jaw 2” is always used for ALL non-high security keys.



The “Cutter” used with “Jaw 2” is always the “TR62.2” double ended cutter.

When you select a non-high security key from the menu, the software will tell you which “Stop” to use, “Shoulder” or “Tip”

Select your key, look under the “Main” column on the home screen, you will find this information in the box labeled “Stop”, it will read either “Shoulder” or “Tip” depending on which key you chose, insert the key into the jaw and raise the “shoulder” stop.

Slide the key forward until it stops on the shoulder of the key, as in *fig. J.3*. Tighten the red knob on top until the key is clamped firmly.

Clamping Non-High Security “Tip Stop” Keys in Jaw 2

When you select a non-high security key from the menu, the software will tell you which stop to use.

Select your key, look under the “Main” column on the home screen and you will find this information in the box labeled “Stop”

It will read either “Shoulder” or “Tip” depending on which

key you chose, insert the key into the jaw and raise the “Tip Stop” slide the key forward until it touches on the stop... See ... *fig J.4*



Remember to fold the “Shoulder” or “Tip” Stop back down before you start to “Trace” or “Cut” a key

*A calibration is required after installing the bolt down kit.
The machine comes pre-calibrated but you may re-calibrate if you feel that it is needed, just don't change the space/depth offset information*

Calibrate Machine for Jaw 1

1. Clean any shavings or debris from jaw (*Any metal shavings, dirt or grease that the stylus touches will take an incorrect reading*) and make sure both shoulder and tip stop are flipped down out of the way.

2. This is the “stylus”



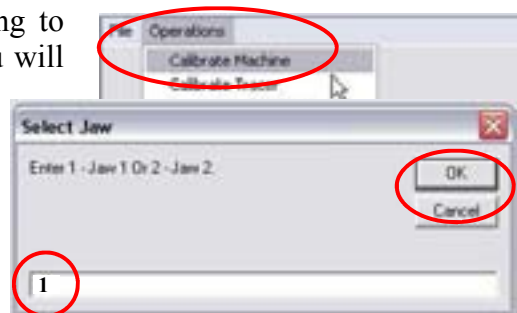
It must be installed to calibrate the machine.

Do not use a cutter to calibrate the 3D Pro

(Refer to the “[Changing Cutter and Stylus](#)” section of the manual before attempting this procedure)

3. Make sure the tracer arm is up before attempting to calibrate the 3-D Pro, if the tracer arm is down, you will receive an error message.

4. On the main screen, click on the “Operations” menu and choose “Calibrate Machine”



5. When the window appears asking for the “jaw type” insert the correct jaw number in the window, (1, 2, or 3 depending on which jaw you want to calibrate) as we are calibrating Jaw “1” we would enter “1” and click “OK”

6. The stylus will touch the jaw in three places. After the procedure is complete it will say “Update in Progress Please Wait” give it a moment and **don't** click anything or it can possibly freeze the software and you will have to restart it.

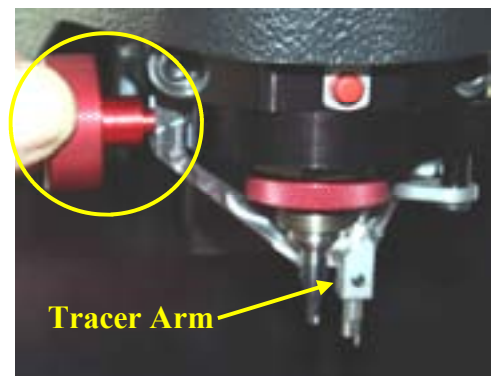
Calibrate Tracer for Jaw 1

1. *Always have a “Cutter” or “Stylus” installed while calibrating the Tracer, do not leave the collet empty.*

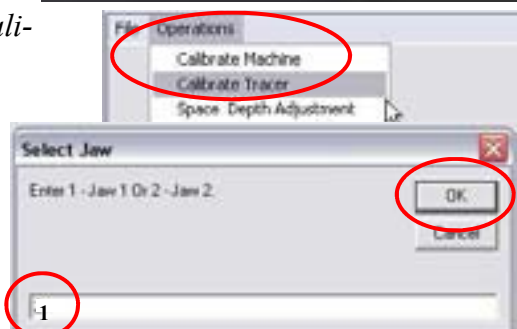
2. Flip the tracer arm down with the “red knurl knob” on the left side of the head..

3. On the main screen, click on the “Operations” menu and choose “Calibrate Tracer”

4. When the window appears asking for the “jaw type” insert the correct jaw number in the window, (1, 2, or 3 depending on which jaw you want to calibrate) as we are calibrating Jaw “1” we would enter “1” and click “OK”



5. The tracer tip will touch the jaw in three places. After the procedure is complete it will read, “Update in Progress Please Wait” give it a moment and **don't** click anything or it can possibly freeze the software and you will have to restart it.



Calibrate Machine for Jaw 2

1. Clean any shavings or debris from jaw (*Any metal shavings, dirt or grease that the stylus touches will take an incorrect reading*) and make sure both shoulder and tip stop are flipped down out of the way

2. This is the “stylus”



It must be installed to calibrate the machine.

Do not use a cutter to calibrate the 3D Pro

(Refer to the “[Changing Cutter and Stylus](#)” section of the manual before attempting this procedure)

3. When calibrating Jaw 2 “**tighten the jaw top**” with the red “**T knob**” so it is completely shut and make sure that side “**A**” is facing to the left.

4. Now follow steps 3 to 6 from [Calibrating the Machine for Jaw 1](#) to carry out calibration of Jaw 2



Jaw 2 may need minor adjustments to space or depth after calibrating to be correct. Refer to the section “*Checking and Adjusting the “Tracer”*” for instructions.

Calibrate Tracer for Jaw 2

1. Clean any shavings or debris from Jaw 2.

2. ***Always have a “Cutter” or “Stylus” installed while calibrating the Tracer, do not leave the collet empty.***

3. Flip the tracer down with the red knurl knob on the left side.

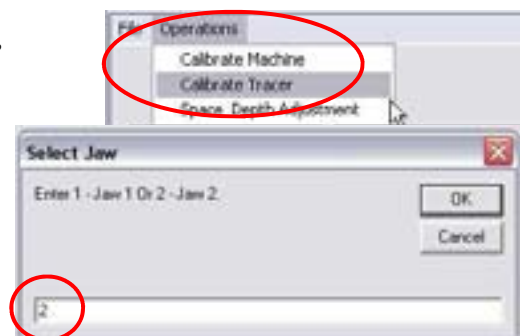
4. When calibrating Jaw 2, tighten the jaw top so it is completely shut and make sure that side “A” is facing to the left.

5. Flip the tracer arm down with the red knurl knob on the left side.

6. On the main screen, click on the “**Operations**” menu and choose “**Calibrate Tracer**”

7. When the window appears asking for the jaw type, insert the correct jaw number in the window
As we are calibrating “**Jaw 2**” we would enter “**2**”

8. The tracer tip will touch the post once and the jaw in two places, after the procedure is complete it will read, “**Update in Progress Please Wait**” give it a moment and **don’t** click anything or it can possibly freeze the software and you will have to restart it.



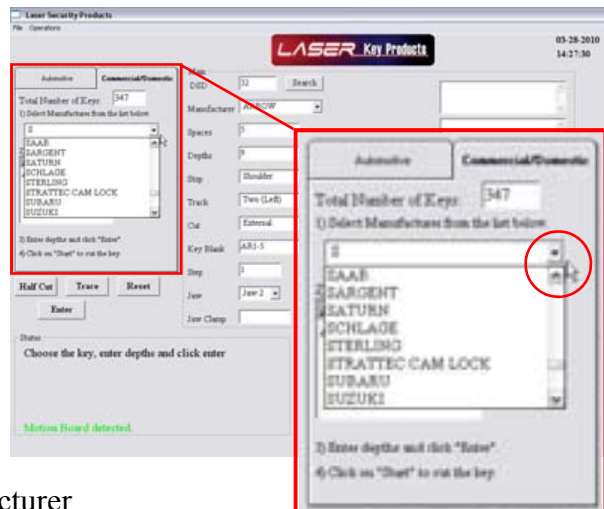
Cutting a Key “Commercial/Domestic”

On the main screen you will see two tabs **“Commercial/Domestic”** and **“Automotive”**

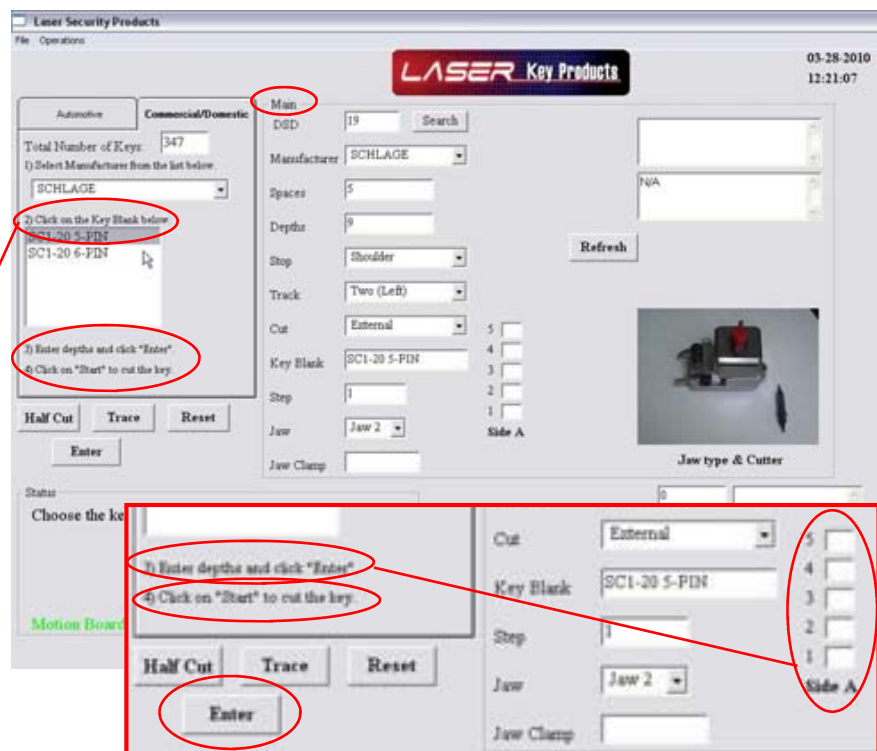
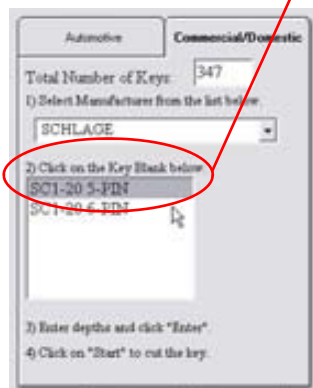
1) The **“Select Manufacturer”** box will have an “Arrow Down” key that you must click.

Pressing any letter at this point will jump directly to all the manufacturers listed starting with that letter, for example, pressing the letter **“S”** will pull up all entries beginning with **“S”**

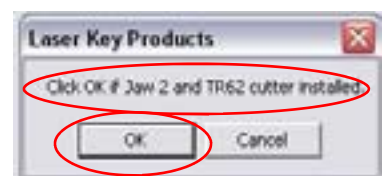
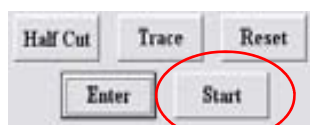
In this example I have used SCHLAGE choosing this will open a box showing all the relevant keys (in the database) for this manufacturer.



2) **“Click on the Key Blank below”** .. Click on the key blank you want and it will open the **“Main”** cutting information window. This window gives us all the information we need to cut the key.



3) **“Enter depths and click “Enter”**
Enter the depth of your cuts starting with “1” as the cut nearest the shoulder of the key. Once the cuts have been entered click **“Enter”**



4) **“Click on “Start” to cut the key”** Once you have entered the cuts, click **“Enter”** and the **“Start”** button will appear, click on the start button and you will see a check box **“Click OK if Jaw 2 and TR62 cutter installed”** If you have the correct jaw and cutter installed, click **“OK”** to cut the key.

Cutting a Key “Automotive”

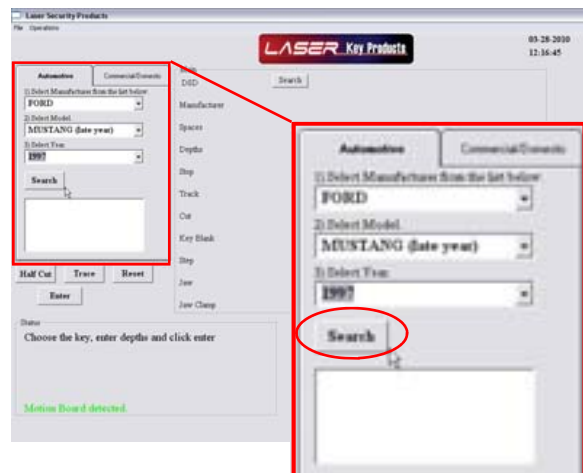
On the main screen you will see two “tabs” “*Commercial/Domestic*” and “*Automotive*”

This time we will click on the “*Automotive*” tab and go to step “1”

1) “*Select Manufacturer from list below*” Press the down arrow and select **FORD**

2) “*Select Model*” Choose the Model of the vehicle next. For example: **MUSTANG**

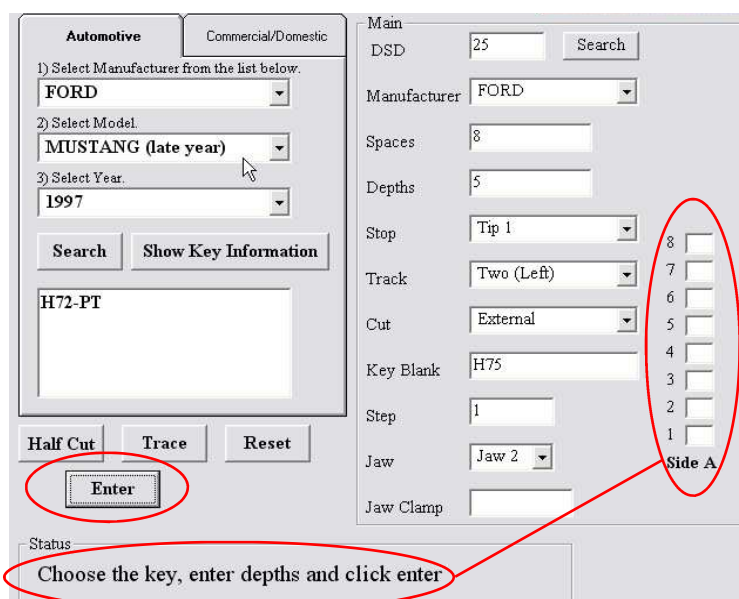
3) “*Select Year*” Choose the year of the Vehicle



Now click on the “**Search**” button, the software will choose the correct key for the information you have selected.

4) “*Choose the key, enter depths and click enter*”

Enter the depth of your cuts starting with “1” as the cut nearest the shoulder of the key. Once the cuts have been entered click “**Enter**”

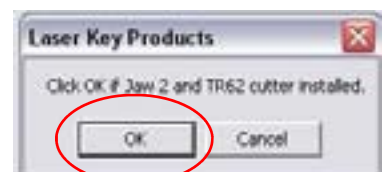
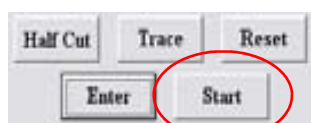


5) “*Click on Start to cut the key*”

Once you have entered the cuts, click “**Enter**” and the “**Start**” button will appear.

Click on the start button and you will get a check box “**Click OK if Jaw 2 and TR62 cutter installed**”

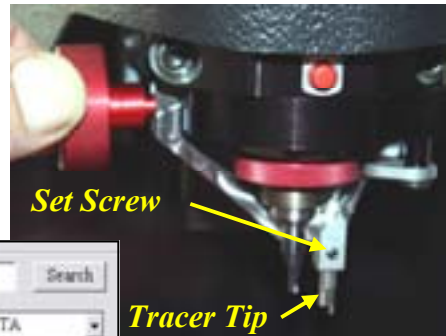
If you have the correct jaw and cutter installed, click “**OK**” to cut the key.



Tracing a Key

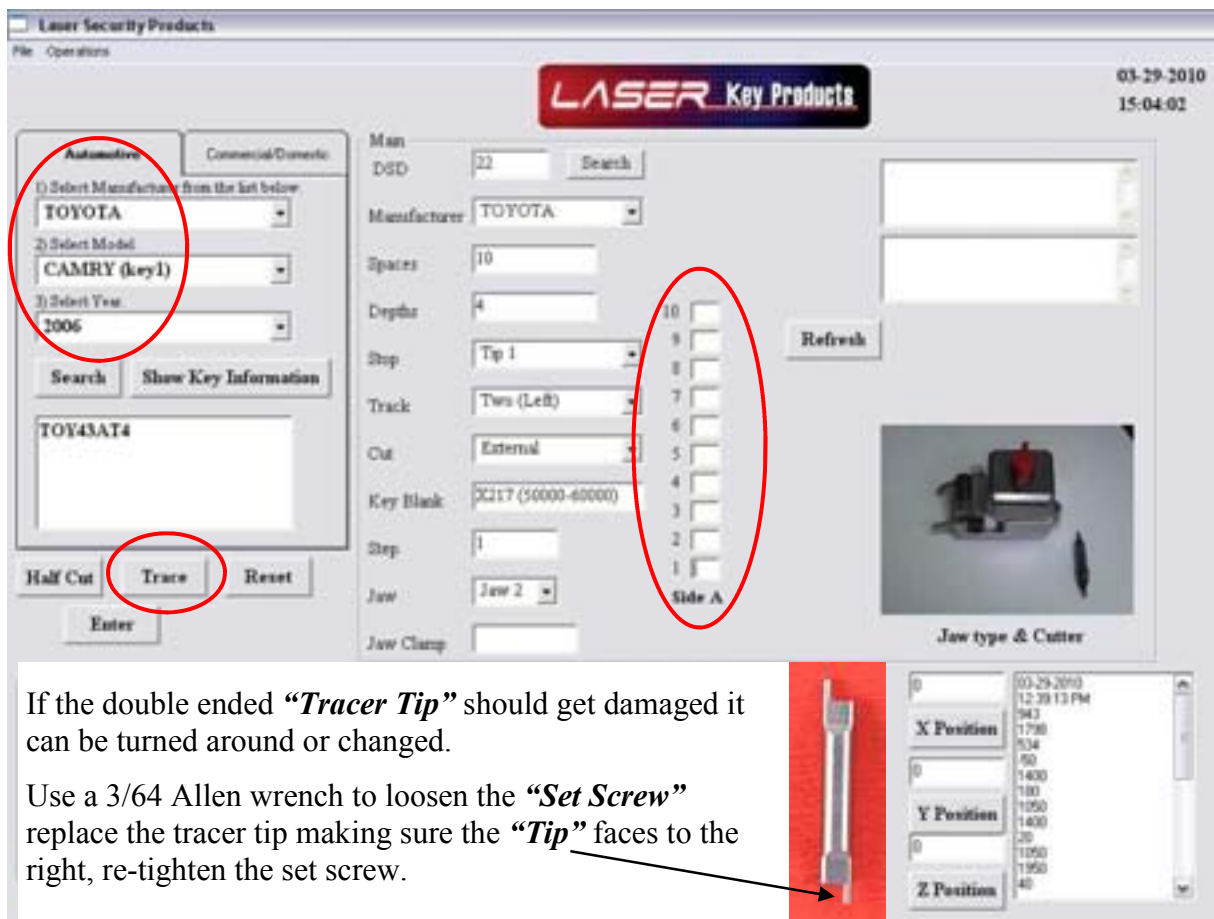
We are going to trace a Toyota key, choose the relevant **Manufacturer**, **Model** and **Year** on the “Main Screen”

Clamp your key into Jaw 2 as shown and remember to **fold down** the **tip stop** once you have clamped the key in the jaw.



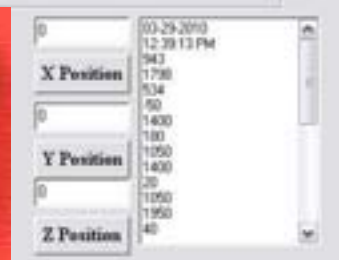
Fold down the “Tracer Arm” and click on the “Trace” button

The machine will now trace the key and the results of the trace will be entered in the “Side A” depth of cuts table.



If the double ended “Tracer Tip” should get damaged it can be turned around or changed.

Use a 3/64 Allen wrench to loosen the “Set Screw” replace the tracer tip making sure the “Tip” faces to the right, re-tighten the set screw.



Space and Depth Adjustment ... JAW 2

IMPORTANT NOTES ON SPACE AND DEPTH ADJUSTMENTS ... JAW 2 ONLY

Depth Adjustment

The depth adjustments/settings are the same for both **“Tip”** and **“Shoulder”** stop keys.
Once set, the **“Depth”** will be right for ALL keys **Tip”** or **“Shoulder”**

Space Adjustment

It is very important to realize that, the **“Tip Stop”** and **“Shoulder Stop”** are totally independent of each other.

We must FIRST adjust the **“Space Offset”** on the **“Cutter”** and **“Tracer”** for the **TIP STOP**.

If you have reason to believe that your machine is not **“Cutting”** correctly you may wish to re-set and re-calibrate your **“Machine”**.

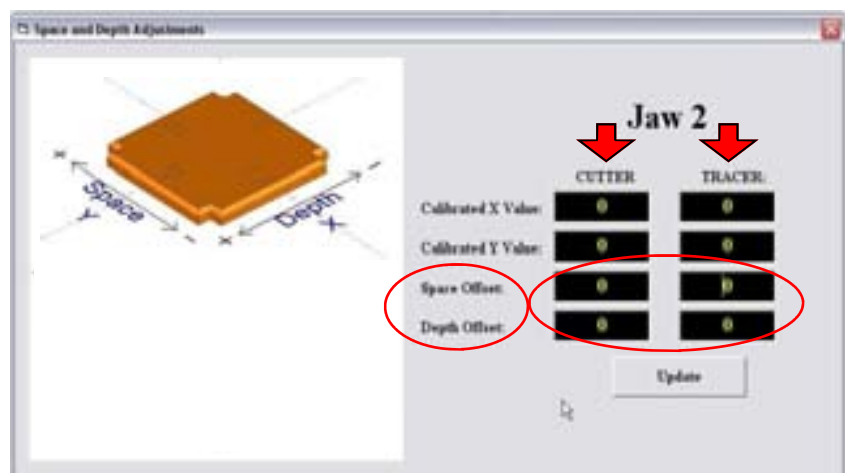
If you have reason to believe that your machine is not **“Tracing”** correctly you may wish to re-set and re-calibrate your **“Tracer”**.

Before you begin the re-calibration, make sure that the Space Offset and Depth Offset are set at **“0”** (zero)

If you are just re-setting the **“Tracer”** then just reset the Tracer offsets to zero

If you are just re-setting the **“Cutter”** then just reset the Tracer offsets to zero

If you are just re-setting **“Both”** then reset all to zero



Then **“Calibrate”** your Machine and/or Tracer ... [see Page 13 for “Calibrating Machine and Tracer for Jaw 2”](#)

*The following pages .. 18 through 23
will show you how to check and set your machine to cut and trace perfectly.*

Explaining the X, Y, Z Axis

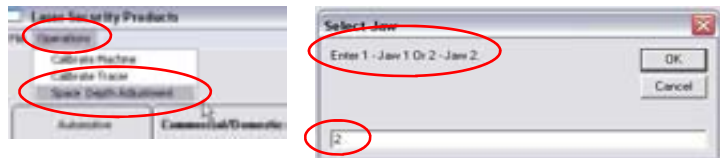
1. This machine has three axis's which are X, Y, and Z
2. The X axis is the movement from left and right and controls the depth.
3. The Y axis is the movement from front to back and controls the spacing.
4. The Z axis is the movement up and down and controls the height at which the cutter is lowered

How to use “Space/Depth Adjustment”

All adjustments are in “.001” (one thousand or “one thou”)

The “*Space*” or “*Depth*” on either the “*Tracer*” or the “*Cutter*” can be adjusted by a maximum of “.020” (20 thousands) either way (+ or -) plus or minus.

To make any of these adjustments, go to “*Operations*” and choose “*Space Depth Adjustment*” on the drop down menu and this will open the “*Select Jaw*” box.

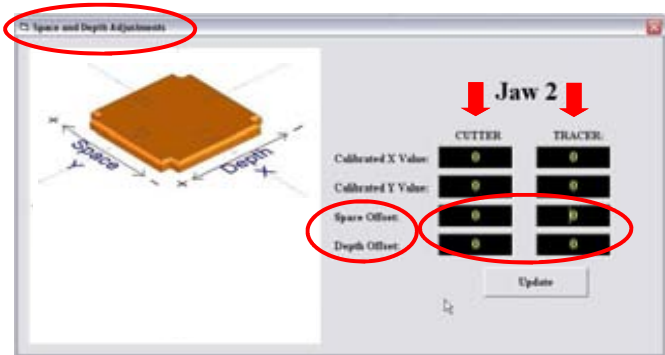


Enter the “*Jaw*” you are intending to make adjustments to, in this example I have entered “2” for Jaw 2. Now click “*OK*” and the “*Space and Depth Adjustments*” box will open

As you will see we can choose “*Cutter*” or “*Tracer*” and also we can choose “*Space*” or “*Depth*” offset.

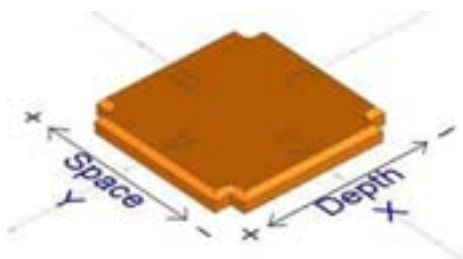
By changing the value from “0” we can adjust the depth or spacing on both the cutter and the tracer.

When we change the values here we are in fact adjusting where the “*cutter*” or “*tracer*” makes contact with the key.

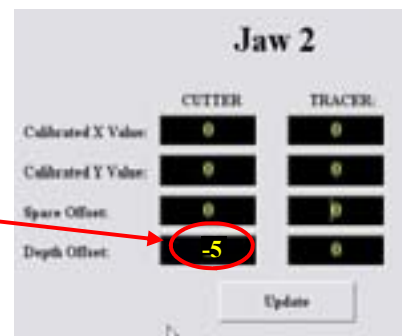


If we want to make the cutter cut *deeper* then we would enter a minus number (-) in the “*Depth Offset*” box.

To cut the key “.005” (5 thou) deeper we would enter “-5” in the “*Depth Offset*” box.



To *lift* the cut (cut less material off the key) and make the cut (5 thou) .005 *higher* we would enter “5”



To make the cutter cut closer to the shoulder of the key we would enter a minus number (-) in the “*Space Offset*” box.

To cut the key .005 (5 thou) closer to the shoulder of the key you would enter “-5” in the “*Space Offset*” box.

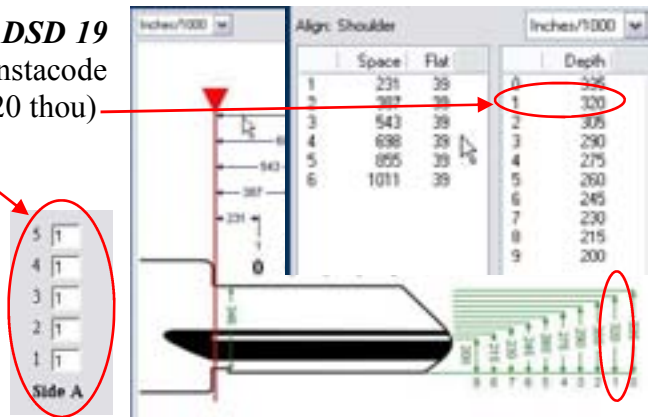
You will see that the “*Space and Depth Adjustments*” box is marked with (+ or -) plus or minus on both Space and Depth.

Checking and Adjusting the “Depth” settings ... JAW2

Set the software to cut a key to “*Schlage*” DSD 19 this is the Schlage 5 pin blank, Instacode shows the “1” (one) depth to be “.320” (320 thou)

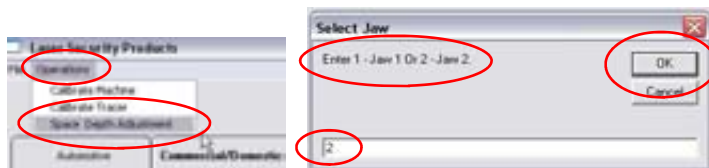
Enter all the cuts as “1” and cut the key

Once the key is cut, read the key “Depth” with a “caliper” to see if it reads “.320”.. if it does then your depth setting is correct, if not you will have to make some slight adjustments.



When I cut my key I got a reading of “.324” ... This is “.004” higher than it should be, so I need to make the software cut the key “.004” deeper.

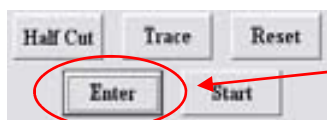
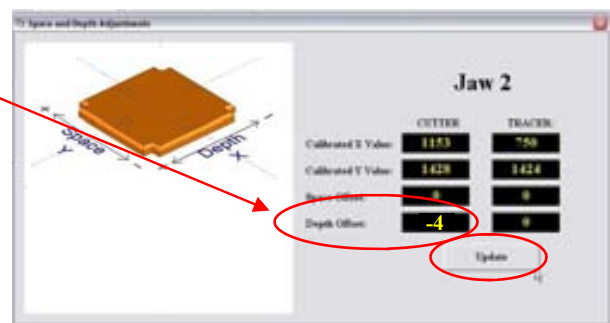
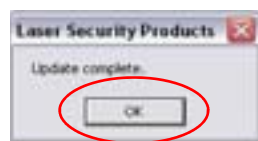
To make this adjustments, go to “*Operations*” and choose “*Space Depth Adjustment*”
On the drop down box select “*Jaw2*” and click “*OK*”



Now change the value in the “*Depth Offset*” to “-4” and click “*Update*”

You will see a message “*Update in progress, please do not turn OFF system*”

Wait until you see: “*Update complete*” and then click “*OK*”



Before you re-cut the key you **MUST** click “*Enter*” before clicking on “*Start*” for the changes to take effect



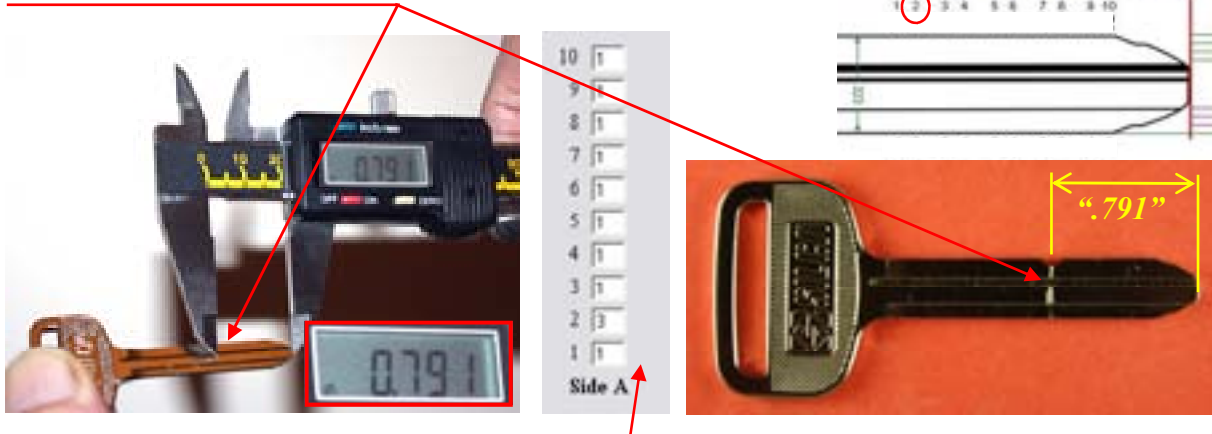
Now re-enter the “1” cuts in all boxes and re-cut the key, re-check the reading with the calipers and you should have a reading of 0320 “.320”



Checking the Cutter “Space” settings for a Tip Stop Key .. JAW 2

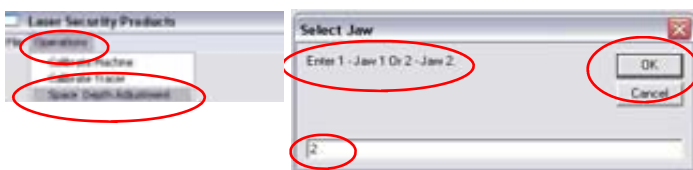
We are going to use the X217 (Silca TOY43) key blank “DSD 22” to check the “Cutter” for a “tip stop key”

First I made a scratch mark on the side of the key with the Caliper at the number 2 position, Instacode shows us that it is “.791” from the tip of the key.



Enter the cuts **1-3-1-1-1-1-1-1-1** and cut the key

If the cut is not in the centre of the mark, you will have to make some slight adjustments. Go to “**Operations**” and choose “**Space Depth Adjustment**” on the drop box, select “**Jaw2**” and click “**OK**”



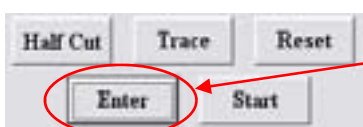
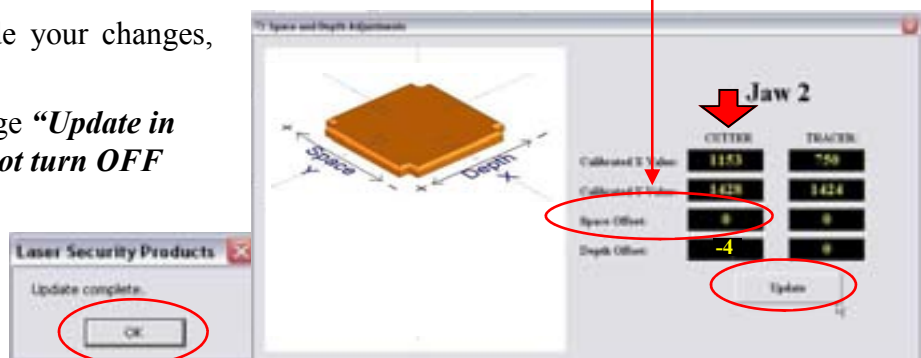
To cut the key .005 closer to the “**shoulder**” of the key ... enter “**-5**” (minus 5) in the “**Space Offset**” box (under cutter)

To cut the key .005 closer to the “**tip**” of the key ... enter “**5**” in the “**Space Offset**” box.

When you have made your changes, click “**Update**”

You will see a message “**Update in progress, please do not turn OFF system**”

Wait until you see: “**Update complete**” and then click “**OK**”



Before you re-cut the key you **MUST** click “**Enter**” before clicking on “**Start**” for the changes to take effect

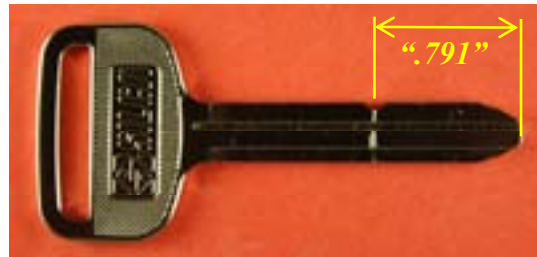
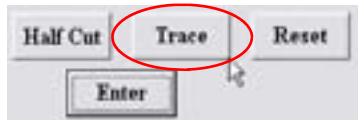
You might want to re-check you depth settings by reading the depth of the number 3 cut with the calipers.

The depth should read 0272 “.272”



Checking the Tracer “Space” settings for a Tip Stop Key .. JAW 2

We are going to use the X217 (Silca TOY43) key blank that we marked and cut earlier to check the “Tracer” for a “tip stop key”

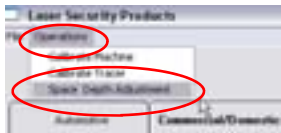


Set the software to X217 (Silca TOY43) “DSD 22” and clamp the key in Jaw 2 and click on the “Trace” button.

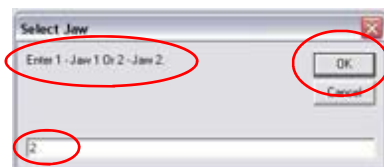
Now watch the tracer as it moves along the key and see if it drops in the “center” of the number 2 cut, I noticed that the tracer on mine did not drop in the center of the number 2 cut BUT it dropped too close to the head of the key.

To make the tracer tip drop into the center of the cut we need to make some adjustments.

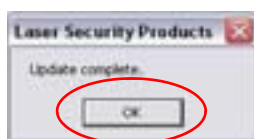
Go to “Operations” and choose “Space Depth Adjustment” on the drop box select “Jaw2” and click “OK”.



Now change the value in the “Space Offset” on the tracer to “2” to bring the centre of the tracer “.002” (2 thou) closer to the tip of the key, then click “Update”

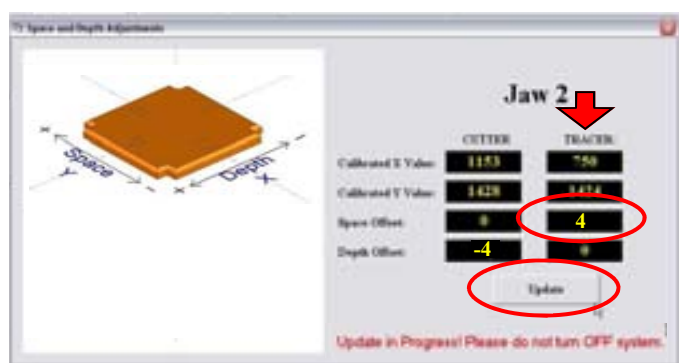


You will see a message “Update in progress, please do not turn OFF system”. Wait until you see: “Update complete” and then click “OK” ... Now trace the key again.



I found that the tracer was still dropping too close to the head of the key so I changed the offset to “4”, then click “Update” again and wait until you see: “Update complete” and then click “OK”

I traced again and this time the tracer was perfectly in the center of the cut.



Your 3-D Pro should now be Calibrated perfectly for Cutting and Tracing on JAW2 Tip Stop

Checking the “Cutter” settings for a Shoulder Stop Key ... JAW 2

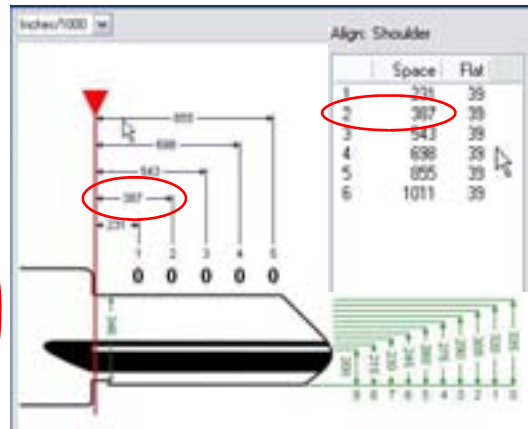
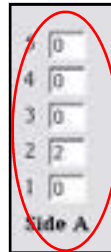
We are going to use a Schlage to check the “Cutter” for a “shoulder stop key”

Now check to see what Instacode shows for the “2nd” space on a Schlage key.

As shown, space two is “.387” (387 thou) from the shoulder of the key.

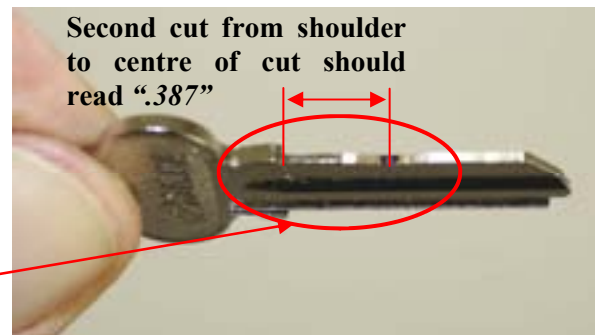
Set the software to cut a key to “Schlage” **DSD 19** settings.

Enter the cuts as **0-2-0-0-0** and cut the key



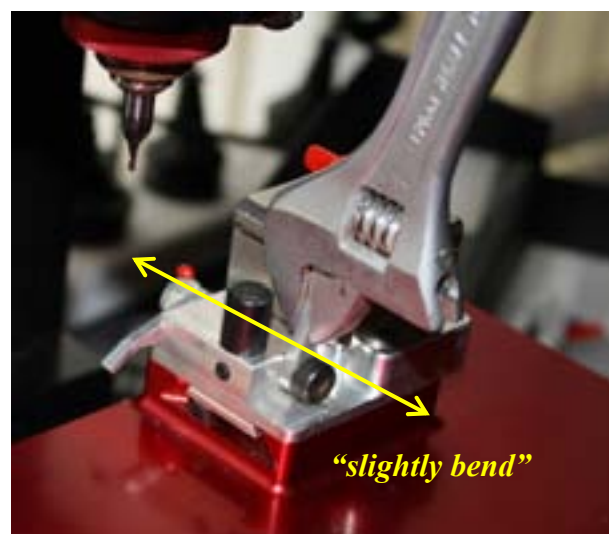
Once the key is cut, read the key “Space” with a “caliper” from the shoulder of the key to the “2nd cut” this should read “.387” (387 thou)

When I cut my key it read (0388) “.388”



This is cutting well within key specs and should be set properly.

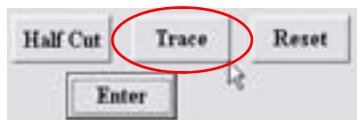
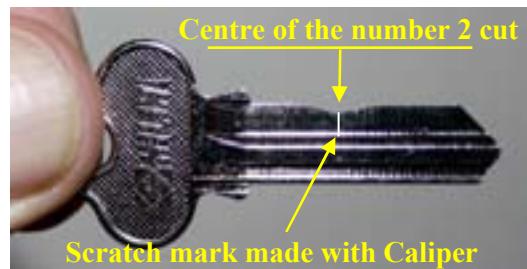
The shoulder stop should be flush with the edge of the pocket which is cut into the corner of the jaw. If you flip the shoulder stop up you can tell if it has been slightly bent forward, if it has you will want to bend it back to match the edge of the jaw pocket. Use a small “Crescent Wrench” to do this, by tightening the Crescent onto the Shoulder Stop you have a lot of control while bending.



Checking the “Tracer” settings for Shoulder Stop Key ... JAW 2

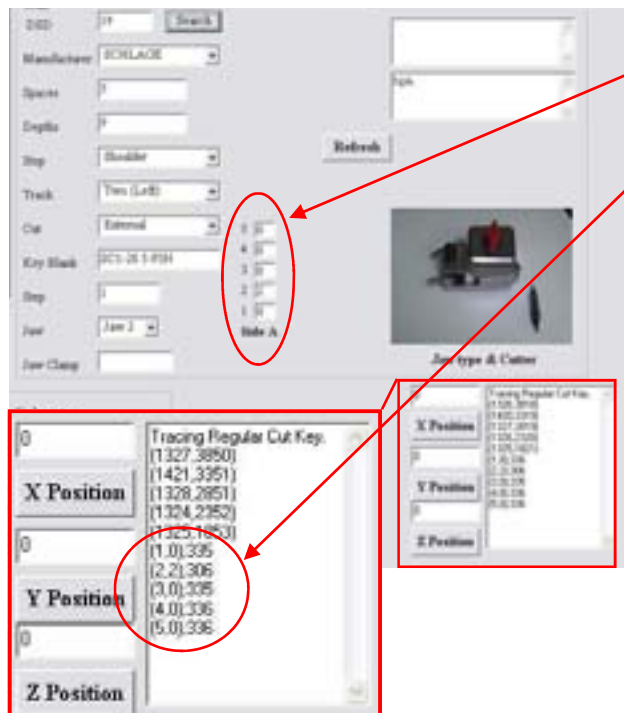
We are going to use the Schlage key with the number 2 depth to check the “Tracer” for a “shoulder stop key”

I made a scratch mark on the side of the key with Caliper.



Set the software to cut a key to **DSD19 “Schlage”** settings and clamp the key in Jaw 2 and click on the “Trace” button.

Now watch the tracer as it moves along the key and see if it drops in the “centre” of the number 2 cut.



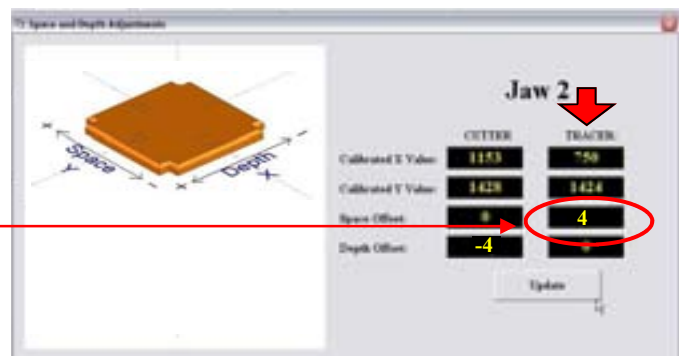
When the tracer has finished, you will see what it read in the box “Side A” and you will also see the readings in the box at the bottom of the “Main” screen, these are the “Actual” depths that the tracer read.

1 = 335 = 0
2 = 306 = 2
3 = 335 = 0
4 = 336 = 0
5 = 336 = 0

Align: Shoulder				Inches/1000
	Space	Flat		Depth
1	231	38	0	335
2	387	38	1	306
3	543	38	2	305
4	698	38	3	290
5	855	38	4	275
6	1011	38	5	260
			6	245
			7	230
			8	215
			9	200

As you can see the readings are within a “.001” (one thou) of the cuts shown in “Instacode”, see pic above.

Should the “Depth” settings need to be changed, this can be done by changing the “Depth Offset” under “Tracer” in the “Space and Depth Adjustments” box.



Explaining the Software ... Show Key Information

There is an optional **“Show Key Information”** button, you can select this to read available information or add additional information to the key database. *See Below*

When you have finished with this information you can click the **“Hide Key Information”** button.

The screenshot shows the 'Automotive' tab of the software. It contains three dropdown menus: '1) Select Manufacturer from the list below' (set to FORD), '2) Select Model' (set to MUSTANG (late year)), and '3) Select Year' (set to 1997). Below these are two buttons: 'Search' and 'Show Key Information', which is circled in red.

The screenshot shows the 'Key Information' window. It contains a table with two columns: 'Key Information' and 'Value'. The 'Hide Key Information' button is circled in red.

Key Information	Value
Key ID	1899
DSD	25
Make	FORD
Model	MUSTANG (late year)
Year	1997
Key Type	TRANSPONDER
Dealer Key	
Dealer Key 2	
ILCO Blank	H72-PT
STRATTEC Blank	598333
JMA Chip/Blank	TP02 / FO-15D.P
HATA Blank	
Other Blank	H82-PT (valet)
Other Blank2	
NON-XPNDR SUB	H75
Cloneable	TEX or IPX1
Silca Blank	
OEP New	3X15
OEP Copy	1KEY
Program Tool	NGS/IDS/TCODE/HOT
System/Dangle	PATS1 / A (black)
Pin Code	NO
OEM Chip Type	TEX 4C / TX00
Chip Reusable	YES
Chip Logic	CRYPTO
Code Series/Card	0001X-1706X / X101
Tumbler Locations	IG 2-8/DR 1-6/TR 3-8/G
Max Keys	16
Notes	
Remote Tool	OEP JUMPER WIRE
Remote Part #	
Remote FCC#	GQ43VT4T
Remote2 Part#	
Remote2 FCC#	
Remote Notes	

Software Home Screen

Explaining the software, buttons, tabs, boxes and drop down menu's

Explaining the software

Half Cut

The button ***“Half Cut”*** refers to cutting 1/2 depths when using **Determinators**.

When half cut mode is entered, 1=1-1/2 (one and a half) and 3=3-1/2 (three and a half) etc.

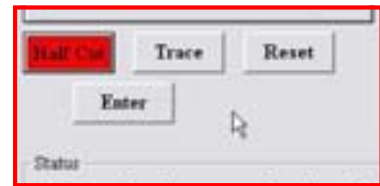
You must still follow the procedures to choose the correct key blank type first.

When using the half cuts you must first click on the ***“Half Cut”*** button and the button will blink red, this assures you that you are in half cut mode. Now you can enter your depths into the spaces and click ***“Enter”*** and then ***“Start”***.

To **exit** half cut mode, click the ***“Half Cut”*** button and the red blinking will stop.

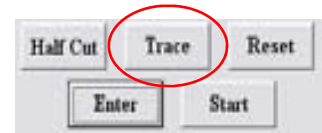
Change the spaces to the correct numbers and click ***“Enter”***.

If you press ***“Start”*** without clicking ***“Enter”***, half cut mode will not be disabled.



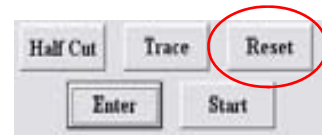
Trace

Refer to page 17 for informaton



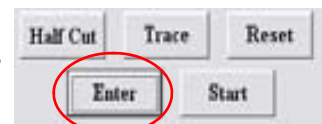
Reset

Reset clears all entry boxes to make starting over easier.



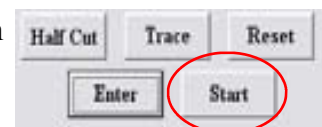
Enter

If any input data is changed, you must press this button for the changes to take effect, if data is changed after the ***“Enter”*** button has been pressed, the software will require you to press the button again.



Start

The ***“Start”*** button will only appear after the ***“Enter”*** button has been clicked. **Remember: If any data is changed, this button will disappear.**

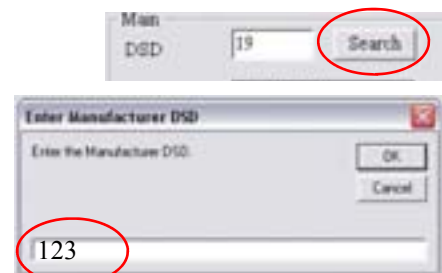


Main Screen

The main screen allows you to see all of the parameters of the key you are working with.

DSD (Depth and Space Data)

Every key has its own DSD number. When clicking on the ***“Search”*** button, you can enter any DSD number in the database. Once the DSD has been entered, press the ***“Ok”*** button. This will bring up the key you have selected in the ***“Main”*** column. You may exit the search by clicking on ***“Cancel”***.



Explaining the software

Manufacturer

The manufacturer gives you reference to the current car you are working on.

Spaces

This value tells you how many spaces are on the key you are working with.

Depths

This value tells you how many depths are on the key you are working with.

Stop

There are 4 different types of “Stop”: Shoulder, Tip 1, Tip 2, and Tip 3. Make sure that you insert the key to the correct tip stop. If not done properly, you may cut the key wrong or damage the cutter.

Track

This tells you how many edges of the key will be cut. There are 3 different types: Four, Two (Left), and Two (Right).

Cut

This location explains how the key will be cut, internally or externally.

Key Blank

Tells you what key blank you should be using.

Step

Used by the Matrix Retro and is set to 1 by default.

Jaw

There are 3 types of jaws: Jaw 1, Jaw 2, and Jaw 3. Once the key is chosen, the software will indicate which jaw should be used.

Jaw Clamp

This indicates which side of Jaw 2 you should clamp the key with, A, B, C, or D.

Side A / Side B Spaces

The spaces that are needed will show up according to the type of key blank that is being cut. “Side A” will be a left-hand cut to the key, and “Side B” will be a right-hand cut. If “Side A” and “Side B” are present, it will cut both sides of the key.

The screenshot shows a software window titled "Main" with the following settings:

- DSD: 25 (with a Search button)
- Manufacturer: FORD (dropdown menu)
- Spaces: 8 (text input)
- Depths: 5 (text input)
- Stop: Tip 1 (dropdown menu)
- Track: Two (Left) (dropdown menu)
- Cut: External (dropdown menu)
- Key Blank: H75 (text input)
- Step: 1 (text input)
- Jaw: Jaw 2 (dropdown menu)
- Jaw Clamp: (empty text input)

On the right side, there are checkboxes for "Side A" and "Side B" corresponding to values 8, 7, 6, 5, 4, 3, 2, and 1.

Explaining the software

Comment Boxes

There are two comment boxes.

The top box displays default comments about the key, while the bottom box displays comments that you set in the edit screen. The bottom box allows

the user to enter notes for a specific key type or comments about the car type. To edit user comments, you go to the “File” menu and click on “Edit”. Once in the “Edit” screen, click on the “Edit” button and a dialog box will appear asking you to verify yourself as an authorized user. Press “Yes” and another box will appear. You do not have to enter a password. In the “Domain” drop-box, press the down arrow key and choose “This Computer”, then press “Submit”. After editing the comments, you **MUST** click on the “Done” button that has appeared. Failing to do so may cause your software to not recognize the database.

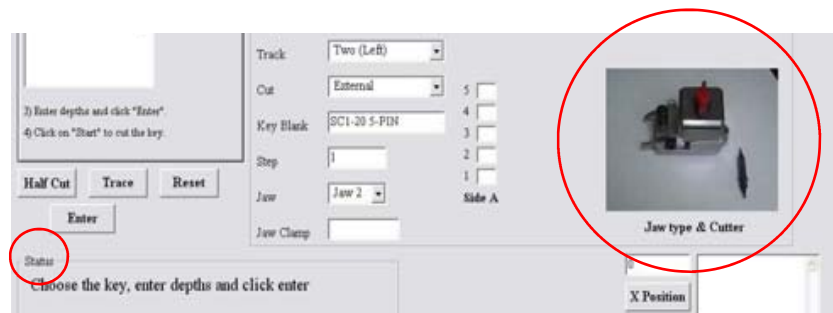


Jaw type & Cutter

Jaw type & Cutter displays a picture of the jaw type and cutter that should be used to cut the key.

Status

This box displays what the 3D Pro is currently working on. It also shows the status of the connection board, whether it has been found by the software or not. The status box will also give you the next step in the process of cutting a key and lets you know when the process of cutting a key is complete.

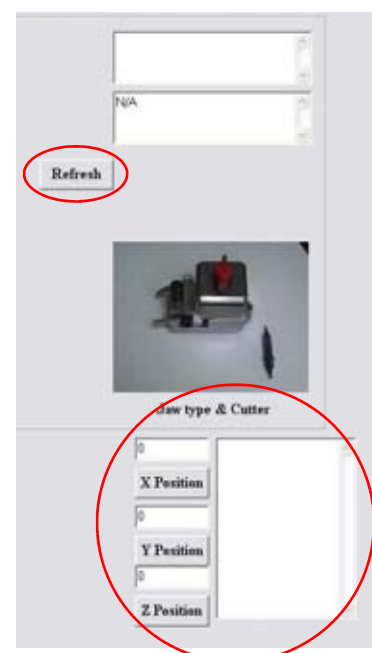


Re-Connect

The re-connect button is only used when the board cannot be found. To use this button you must cycle the power on the machine off and then on again. You may now press the re-connect button to refresh it with the software. The software can only be refreshed once. If it loses the connection after it has already been refreshed you must restart the software.

Tech Box

This box is located at the bottom right-hand corner of the software interface. If you are having trouble cutting or tracing a key, this box displays data that the service tech will use to fix the problem. This also shows the parameters in which the cutter is going to cut a key and what the tracing parameters were measured at.



Using the Edit Screen

The Edit screen is for displaying all of the information about any chosen key.

In this screen, the only parameters that can be edited are “Cutting Data” and “Tracing Data”. To edit these parameters, follow this procedure:

You must have the key chosen that you want to make the changes. If you open the edit screen but notice the wrong key is displayed, simply choose it from the drop down box on the right just like the home screen.

Click on the “Edit” button and a dialog box will appear asking you to verify yourself as an authorized user.

Press “Yes” and another box will appear.

You do not have to enter a password.

In the “Domain” drop down box, choose “This Computer”, now click on “Submit”. After editing the parameters, you **MUST** click on the “Done” button that has appeared. **Failing to do so may corrupt the database in which case you would have to reload it.**



Cutting Data

This contains the spaces that are on each type of key. Depending on which type of key you are working with, either a shoulder stop or a tip-stop key, this will determine the order of the spacings. If you are using a shoulder stop key, the spacing will start from 0 and move up. If using a tip-stop key, it will start with the last cut and move up, in increments, towards the first cut of the key. Depending on the track of the key, there may be “Side A Spaces” and/or “Side B Spaces”.

Cut Depth

This is where you enter in how deep the cuts should be. When editing these cuts, you should be careful as not all key depths are calculated the same.

(Example: Measuring from the bottom of a Schlage key to the top of the cut would give you the thickness of the key. A 1 depth on a Schlage key should measure .320")

Half Cut Depth

This is for use with Determinators. When clicking on the “Half Cut” button on the main screen, it will flash red to indicate that it has been selected.

Whatever parameters you have filled in the “Half Cut Depth” boxes, it will use these instead of the default parameters once the button has been selected.



Tracing Data

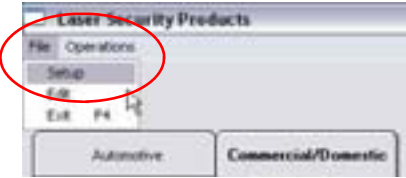
Tracing Data should normally match the “Cutting Data”, but in some cases it will not.

End Cuts

These are pre-defined parameters of how the tip of each key will be cut, these are not in any way adjustable by the user.

Using the Setup Screen Read From PC

This is the button that you would use to see what the stored calibration numbers are on your computer. Remember that it also stores your pre set calibration numbers on the memory in the 3D Pro so you want these numbers to be the same. A lot of times your default calibration numbers that come up once new software is installed are not the correct numbers you want to use, it would be the ones saved in the memory on your 3D Pro.



Example: If you open the software, and the machine is found but the machine does not seem to be acting correctly. Check the setup screen **“File/Setup”** and it would probably look like Fig. S.1. It is best to first try re-connecting the software to make sure your calibrations are read from the machine.

Fig. S.1.

Height and Jaw Calibration								
Jaw 1			Jaw 2			Jaw 3		
Cutter:			Cutter:			Cutter:		
X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start
0	0	0	0	0	0	0	0	0
Step 1(x)			Step 1(x)			Step 1(x)		
0	0	0	0	0	0	0	0	0
Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1
0	0	0	0	0	0	0	0	0
Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2
0	0	0	0	0	0	0	0	0
Tracer:			Tracer:			Tracer:		
X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start
0	0	0	0	0	0	0	0	0
Step 1(x)			Step 1(x)			Step 1(x)		
0	0	0	0	0	0	0	0	0
Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1
0	0	0	0	0	0	0	0	0
Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2
0	0	0	0	0	0	0	0	0

If you cannot retrieve the pre set calibrations stored in your 3D Pro, click on the **“Read from PC”** button and all of the parameters will be restored to default. You must then click on the **“Master Update”** button, this will save the calibrations to the memory on the 3D Pro. Keep in mind that these are the “default” calibrations and your machine would need to be re-calibrated.

Setup

File

Height and Jaw Calibration

Jaw 1			Jaw 2			Jaw 3		
Cutter:			Cutter:			Cutter:		
X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start
943	1798	134	1154	1429	681	912	1522	0
Step 1(x)	Step 1(y)	Step 1(z)	Step 1(x)	Step 1(y)	Step 1(z)	Step 1(x)	Step 1(y)	Step 1(z)
-50	1400	180	-700	450	100	0	0	0
Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1
1050	1400	20	945	1560	125	0	0	0
Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2
1050	1950	40	1070	1560	0	0	0	0
X-Start Offset	Y-Start Offset		X-Start Offset	Y-Start Offset		X-Start Offset	Y-Start Offset	
0	0		0	0		0	0	

How to Update Software

- The “Locksmith Database”, “Software Icon”, “Keys and Remotes Database” and “Setup Files” are all able to be updated individually.
- The “Locksmith Database” contains all the specs on the keys like space, depth, end cuts, and all the key parameters.
- The “3D Pro Software” is the program that controls the machine and gives all of the motion control commands
- The “Setup Files” contain all of the calibration numbers.
- The “Key’s and Remote’s” database contains all of the information about the key chosen like FCC#, Chip type, is it programmable and so on.

Database Updates

The key database updates will be free. Sometimes a new key that is input will not work with older software and you must have the newer version.

Our website is located at: www.laserkeyproducts.com

Navigate to the website and choose the “3D Pro Database Update”

It will now prompt you for a password (please call in for the password and assistance if this is the first time doing a database update)

All new installs should already have the newest database

Software Updates

There will sometimes be a charge for newer software.

Our website is located at: www.laserkeyproducts.com

1. Navigate to the website and click on “3D Pro Install Bundle”, it will now prompt you for a password.

Please call for the password if there is some reason you need to download the software bundle again. We will ask a series of questions to ensure that you receive the right version.

For help or support in Australia:

AA Emergency Locksmith

Tony & Suzanne Audsley

Perth, Western Australia

Phone: 08 9358 3016

Mobile: 0416 11 22 69

Email: lockey@iinet.net.au

Web: www.locksmithtools.com.au

If you find any mistakes or have any suggestion to this manual, please contact:

Tony at: lockey@iinet.net.au

Saving your machines “Setup Information”

Once you have your 3D Pro up and running and everything is working well, it is important that you save these 3 files,
I would advise that this information is saved or stored on a memory stick or in a separate place on your hard drive.

Go to: Start – Control panel – My Computer – Local Disk (C:) .. open Folder “Program Files” open folder “Laser Security Products”

The 3 files we are looking for to save are:

“J1 Setup” contains the setup information for
Jaw 1 on YOUR machine

“J2 Setup” contains the setup information for
Jaw 2 on YOUR machine

“J3 Setup” contains the setup information for Jaw 3 (Tibbe) on YOUR machine



This information is important and relevant **only to your machine** should your machine or PC loose this information

Troubleshooting

COM Error

If you start your software and the software says “Communications Error” or “Board Not Found” check these options:

1. Insure that the power button on the back of the 3D Pro is on
2. Make sure that the emergency stop button is disengaged
3. Insure that the USB cable from the 3D Pro is plugged into a USB port on your computer.

Freezing Load Bar

If while opening the software the load bar freezes, and the software doesn't respond, check and make sure that the X motor is plugged in and screwed down. This cable is not connected when the machine is shipped. Also make sure that you are on the latest version of software, some of the earlier versions had issues freezing up on the load bar. If you open your software and it freezes on the blue load bar, check and make sure your version is current.

Using an inverter

If using an inverter to power the 3D Pro, make sure the inverter is properly grounded to the vehicles chassis otherwise you may incur problems with the operation of the Machine.

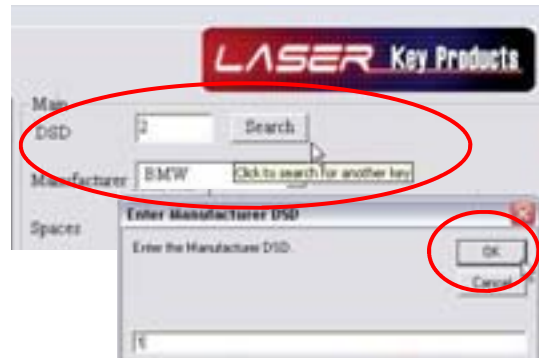
If a problem occurs that you are unable to repair yourself, please call us at: 281-339-3501

Hints and Tips

Cutting a key by DSD number

When cutting a key, if you know the DSD number you can *short cut* by going direct to “**Search**”

Click on “**Search**”, when the box opens enter the DSD number and click “**OK**”, this will take you straight to the key blank.



Changing the Cutter or Stylus



When changing a “*cutter or stylus*”, if you loosen the red knurl knob and find the cutter cannot be removed easily.

Loosen another round or two on the top knurl knob and this will force the collet to flare open and the cutter can now be easily removed.

Once you learn how to use the 3-D Pro, you might find a quicker or easier way of doing something. If you would like to share it with others and have it included in this section of the “User Guide” please drop me an email: lockey@iinet.net.au